

## **REMARKS/ARGUMENTS**

In the specification, paragraphs on pages 5 and 8 are amended to correct minor editorial problems. Claims 1, 7, 22, 26 and 35 are amended. Claims 2-4, 8-21, 24, 25, 27-34 and 36-42 are canceled. New claims 43-48 are submitted with this response. Claims 1, 5-7, 22, 23, 26, 35 and 43-48 remain in the application.

The Applicants hereby request further examination and reconsideration of the application in view of the foregoing amendments and discussion below.

Claims 1 and 22 are amended to recite the shape of the inlet opening in the sampler and the corresponding configuration of the inlet passageway terminating in an outlet opening. Support for these amendments can be found, for example, in the specification beginning at page 6, line 21, to page 7, line 4, and FIGs. 2 and 3.

Claims 7 and 26 have been amended to correct minor editorial problems for clarification.

Claim 35 has been amended to recite a slide located within the recess in the housing of the sampler, and to recite that the inlet passageway is formed in the upper portion of the housing. Claim 35 is further amended to recite that the bore has greater depth than the recess, and the longest planar dimension of the bore at the inner surface of the lower portion of the housing is less than the longest dimension of the slide. Support for this amendment can be found, for example, in the specification beginning at page 5, lines 16-27, and FIGs. 2 and 3.

Claims 43 and 45 are added depending from claims 1 and 44, respectively, and define an outlet opening of the inlet passageway that is coplanar with the inner surface of the top cap. Support for claims 43 and 45 can be found, for example, at FIGs. 2-4 of the specification.

Claim 44 is added depending from claim 1, and defines an integral protuberance extending upwardly from the upper surface of the top cap for defining the inlet passageway. Support for claim 44 can be found, for example, at page 4, lines 29-31, and FIGs. 1-4 of the specification.

Claims 46-48 are added depending directly and indirectly from claim 35, and define the disposition of the recess for receiving the slide and the shape and size of the bore. Support for claims 46-48 can be found, for example, at page 5, lines 16-27, and FIGs. 1 and 2 of the specification.

Claim 35 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. The examiner questioned whether the claim includes a slide. Claim 35 has been amended herein to recite a slide located within said recess in the lower portion of the housing to address the Examiner's rejection.

Claims 1 and 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,201,231 to Smith in view of either U.S. Patent No. 3,518,815 to McFarland et al. or U.S. Patent No. 5,788,741 to Burton et al., and further in view of U.S. Patent No. 4,796,475 to Marpel.

The Examiner states that it would have been obvious to employ McFarland's venturi/laminar (Figure 3), slit (Figure 2) aperture for Smith's inlet because McFarland teaches that such an opening may permit for successfully passing particulate samples to an impaction surface. The Examiner notes that the dashed lines in Figure 3 of McFarland indicate the sample passing vertically downward, suggestive that the lower portion of the opening has a laminar section. The Examiner further adds that in the alternative, it would have been obvious to employ Burton's venture(sp) 30/laminar 32/slit 31 (Figure 1) aperture for Smith's inlet because Burton teaches that such an opening may permit for successfully passing particulate samples in an impaction sampler. The Examiner also states that in addition, it would have been obvious to employ a cap for Smith's top as Marpel teaches use of a sealing cap 13A to couple an impaction plate to an inlet opening.

Applicant respectfully submits that the Smith in view of either McFarland et al or Burton et al, and further in view of Marpel does not suggest the presently claimed invention, either singly or taken in any reasonable combination.

Specifically, claim 1, as amended recites, *inter alia*, recites an inlet opening configured as a slit having opposed outwardly radiused arcuate end portions and an inlet passageway extending from the inlet opening. A first portion of the inlet passageway includes opposed planar side walls and outwardly radiused arcuate end walls converging inwardly from the inlet opening. A second portion of the inlet passageway includes substantially parallel side walls and opposed outwardly radiused arcuate end walls extending from the bottom (or inner) edge of the first portion of the inlet passageway. The bottom (or inner) edges of the second portion of the inlet passageway define an outlet opening. The configuration of the inlet opening and the inlet passageway, as presently claimed, are neither taught nor suggested by references. In particular, the converging arcuate end walls of the first portion of the inlet passageway are not shown or suggested by the prior art.

Therefore, Applicant believes that claim 1 defines a novel airborne particle impaction sampler which is not fairly suggested by the prior art, either alone or in any reasonable combination. Further, claims 5-7 and 43-45 of the present application depend from claim 1. In addition to the distinguishing features recited in claim 1 and discussed above, the slit impaction sampling device of the present invention has additional advantageous features defined in the claims depending from claim 1, which further distinguish the present invention over the prior art.

Claims 22, 23 and 26 are rejected under 35 USC §103(a) as being unpatentable over Smith in view of Marpel. The Examiner states that Smith teaches a method of sampling, including: providing a greased slide 35, loading the slide, assembling a top portion 22 of the sampler to a base 10 portion, connecting a vacuum source to an outlet (region on both sides of the slide, or even an outlet of the housing) of the sampler, drawing air into an inlet 23, accelerating the air via the inlet, and directing air to the slide. The Examiner notes that Smith does not employ a "laminar portion" in its inlet. As to claims 22, 23 and 26, the Examiner states that it would have been obvious to employ Marpel's nozzle 20 in place of Smith's slit as Marpel teaches that this differently (from Smith) shaped aperture will successfully allow for a sampling of particles in an impactor. The examiner adds that either the passage around beam 4 (and immediately there below) may be deemed to be an outlet, or Marpel teaches (Figure 1) that a pump may be exteriorly located from the housing to allow for an

increased ease of replacing vacuum sources. The examiner further notes that the nozzle of Marpel has a tapered inlet immediately above the laminar section, and that tapering results in acceleration.

The Applicants respectfully submit that the references do not suggest the presently claimed invention, either singly or taken in any reasonable combination. Independent claim 22, as amended, defines an airborne particle gathering method and recites, *inter alia*, a housing having an inlet opening configured as recited in claim 1 and discussed above. Applicants believe that the configuration of the inlet opening and the inlet passageway, as presently claimed, are neither taught nor suggested by references. In particular, the converging arcuate end walls of the first portion of the inlet passageway are not shown or suggested by the prior art. Therefore, Applicants believe that claim 22 defines a novel airborne particle gathering method which is not fairly suggested by the prior art, either alone or in any reasonable combination. Claims 23 and 26 of the present application depend from claim 22. In addition to the distinguishing features recited in claim 22 and discussed above, the claimed method has additional advantageous features defined in the claims depending from claims 22, which further distinguish the present invention over the prior art.

Claim 35 is rejected under 35 U.S.C. §102 (b) as being anticipated by U.S. Patent No. 4,725,924 to Berger. Claim 35 is also rejected under 35 USC §103(a) as being unpatentable over Berger in view of U.S. Patent No. 6,528,291 to Chow et al. The Examiner states that Berger does not use the term “slide” to describe the plate 38. The Examiner further states that Chow teaches that a silicon wafer may be called a slide, suggestive of calling Berger’s silicon plate a slide. Finally, claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marpel in view of Smith. The Examiner states that Marpel teaches an impaction sampling device, including: housing 13A, 14N17 with releasable portions, plate 27 in communication with inlet 20, recessed portion 28 to receive the plate, bore 29, 33 adjacent the recessed portion to draw air around the plate and into an outlet 24A, remote vacuum 25. The Examiner adds that the plate is not called a slide. As to claim 35, the Examiner contends that it would have been obvious to employ a slide for Marpel’s plate as Smith teaches use of a slide to take samples because (col. 6, lines 20-30) slides are readily accepted by laboratory microscopes to check the samples.

Applicants respectfully submit that claim 35 patentably distinguishes from the references cited by the examiner. Claim 35, as amended recites, *inter alia*, a recess formed in the lower portion of the housing for holding a slide and a bore also in the lower portion of the housing and having a greater depth than the recess. The claimed bore is sized to allow air to flow around the slide, and the longest planar dimension of the bore at the inner surface of the lower portion of the housing is less than the longest dimension of the slide. These features are neither taught nor suggested by the references.

The Berger patent teaches support posts for supporting the slide. Marpel, Chow and Smith also do not shown or suggest the presently claimed arrangement. Therefore, Applicants believe independent claim 35 defines a novel slit impaction sampling device which is not fairly suggested by the prior art either alone or in any reasonable combination. Claims 46-48 of the present application all depend from claim 35. In addition to the distinguishing features recited in claim 35 and discussed above, the slit impaction sampling device of the present invention has additional features defined in

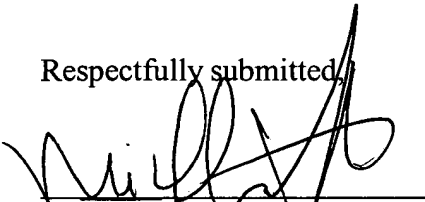
the claims depending from claim 35, which further distinguish the present invention over the prior art.

For the foregoing reasons, the Applicants respectfully submit that the claims of the present application are now in condition for allowance. Entry of the amendments and allowance of the application at an early date is respectfully requested.

If the Examiner has any questions about the present Amendment or anticipates finally rejecting any claim of the present application, a telephone interview is requested.

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Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael G. Johnston", written over a horizontal line.

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